



Patent
Attorney Docket No. 021565-083

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Greta ARNAUT et al.

Group Art Unit: 1638

Application No.: 10/614,524

Examiner:

Filing Date: July 8, 2003

Confirmation No.: 9104

Title: DNA ENCODING INSECTICIDAL CRY1BF BACILLUS THURINGIENSIS PROTEINS AND
RECOMBINANT HOSTS EXPRESSING SAME

THIRD
INFORMATION DISCLOSURE STATEMENT
TRANSMITTAL LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Enclosed is a THIRD Information Disclosure Statement and accompanying form PTO-1449 for the above-identified patent application.

- ☒ No additional fee for submission of an IDS is required.
- ☐ The fee of \$180.00 (1806) as set forth in 37 C.F.R. § 1.17(p) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e), and the fee of \$180.00 (1806) as set forth in 37 C.F.R. § 1.17(p) are also enclosed.
- ☐ Charge _____ to Deposit Account No. 02-4800 for the fee due.
- ☐ A check in the amount of _____ is enclosed for the fee due.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

Date: March 12, 2004

By

Malcolm K. McGowan, Ph.D.
Registration No. 39,300



In re Patent Application of

Group Art Unit: 1638

Examiner:

Confirmation No.: 9104

)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, Applicants hereby submit the following information in conformance with 37 C.F.R. §§ 1.97 and 1.98.

Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited is enclosed. However, copies of the listed U.S. patents and U.S. patent application publications are not enclosed since it is no longer required according to the July 11, 2003 waiver of the requirement for copies of cited U.S. patents and U.S. patent application publications in national patent applications filed after June 30, 2003 and international applications entering the national stage under 35 U.S.C. § 371 after June 30, 2003.

The documents are being submitted within three (3) months of the filing or entry of the national stage of this application or before the first Office Action on the merits, whichever is later. Since these documents are being filed within the time period set forth in 37 C.F.R. § 1.97(b), no fee or statement is required.

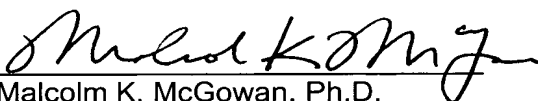
To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner initialed copy of this form be returned to the undersigned.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date March 12, 2004

By:



Malcolm K. McGowan, Ph.D.

Registration No. 39,300

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

THIRD INFORMATION DISCLOSURE STATEMENT BY APPLICANT

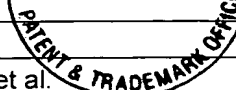
(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number	10/614,524
Filing Date	July 8, 2003
First Named Inventor	Greta ARNAUT et al.
Examiner Name	
Attorney Docket Number	021565-083

MAR 12 2004



U.S. PATENT DOCUMENTS

Examiner Initials	Document Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Issue/Publication Date (MM-DD-YYYY)

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number	Kind Code (if known)	Country	Date of Publication (MM-DD-YYYY)	Translation	
					Yes	No

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	Adang et al., "Characterized Full-Length and Truncated Plasmid Clones of the Crystal Protein of <i>Bacillus thuringiensis</i> subsp. <i>Kurstaki</i> HD-73 and Their Toxicity to <i>Manduca sexta</i> (1985) Gene 36, 289-300, Elsevier Science Publishers, Amsterdam, Holland
	Bennetzen & Hall "Codon Selection in Yeast" (1982) J. Biol. Chem. 257, 3026-3031, American Society for Biochemistry and Molecular Biology, Baltimore, MD, USA
	Bernhard, K. and Utz, R., "Production of <i>Bacillus thuringiensis</i> Insecticides for Experimental and Commercial Uses", In <i>Bacillus thuringiensis</i> , An Environmental Biopesticide: Theory and Practice, pp. 255-267, eds. Entwistle, P.F., Cory, J.S., Bailey, M.J. and Higgs, S. John Wiley and Sons, New York (1993)
	Christensen et al., "Maize Polyubiquitin Genes: Structure, Thermal Perturbation of Expression and Transcript Splicing, and Promoter Activity Following Transfer to Protoplasts by Electroporation" (1992) Plant Mol. Biol. 18, 675-689, Kluwer Academic Publishers, Belgium
	Cornejo et al., "Activity of a Maize Ubiquitin Promoter in Transgenic Rice", (1993) Plant Mol. Biol. 23, 567-581, Kluwer Academic Publishers, Belgium
	Crickmore et al., "Revision of the Nomenclature for the <i>Bacillus thuringiensis</i> Pesticidal Crystal Proteins", (1998) Microbiol. Mol. Biol. Rev. 62(3), 807-813, American Society for Microbiology, Washington, D.C.

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

THIRD INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of 3

Complete if Known

Application Number	10/614,524
Filing Date	July 8, 2003
First Named Inventor	Greta ARNAUT et al.
Examiner Name	
Attorney Docket Number	021565-083



NON-PATENT LITERATURE DOCUMENTS

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	Datta S., Peterhans A., Datta K. and Potrykus I., "Genetically Engineered Fertile Indica-Rice Recovered from Protoplasts", Bio/Technology 8, 736-740 (1990), Nature Publishing, New York NY
	Dulmage, H.T., "Production of Bacteria for Biological Control of Insects" in Biological Control in Crop Production, Ed. Papparizas, D.C., Osmun Publishers, Totowa, NJ, USA, pp. 129-141 (1981)
	Finney, Probit Analysis, 3 rd Edition, Cambridge University Press (1971) table of contents only
	Franck, Guilley, et al, "Nucleotide Sequence of Cauliflower Mosaic Virus DNA", Cell 21, 285-294 (1980), Cell Press, Cambridge, MA, USA
	French, B.T., et al., G.G. "Screening cDNA Expression Libraries with Monoclonal and Polyclonal Antibodies Using an Amplified Biotin-Avidin-Peroxidase Technique" Anal. Biochem. 156, 417-423 (1986) Academic Press, Inc., London, UK
	Fromm M., et al., "Inheritance and Expression of Chimeric Genes in the Progeny of Transgenic Maize Plants", Bio/Technology 8, 833-839 (1990), Nature Publishing, New York, NY
	Gardner, Howarth, et al., "The Complete Nucleotide Sequence of an Infectious Clone of Cauliflower Mosaic Virus by M13mp7 Shotgun Sequencing", Nucleic Acids Research 9, 2871-2887 (1981) IRL Press Limited, Oxford, UK
	Ge A., et al., "Functional Domains of <i>Bacillus thuringiensis</i> Insecticidal Crystal Proteins" J. Biol. Chem. 266 17954-17958 (1991), American Society for Biochemistry and Molecular Biology, Washington, D.C.
	Gielen, J., et al., "The Complete Nucleotide Sequence of the TL-DNA of the <i>Agrobacterium tumefaciens</i> Plasmid pTiAch5" J., EMBO J. 3, 835-845 (1984) IRL Press Limited, Oxford, England
	Gordon-Kamm W. et al. "Transformation of <i>Zea mays</i> L. Using <i>Agrobacterium tumefaciens</i> and the Shoot Apex" The Plant Cell 2, 603-618 (1990), American Society of Plant Physiologists, Rockville, MD
	Gould, J., et al., "Transformation of Maize Cells and Regeneration of Fertile Transgenic Plants", Plant Physiol. 95, 426-434 (1991), American Society of Plant Physiologists, Rockville, MD
	Ho et al., (1989) "Site-Directed Mutagenesis by Overlap Extension Using the Polymerase Chain Reaction", Gene 77, 51-59, Elsevier Science Publishers B.V., Amsterdam, Holland
	Hofte, H., et al "Monoclonal Antibody Analysis and Insecticidal Spectrum of Three Types of Lepidopteran-Specific Insecticidal Crystal Proteins of <i>Bacillus thuringiensis</i> ", Applied and Environmental Microbiology 54, 2010-2017 (1988), American Society for Microbiology, Washington, D.C.
	Hofte H. et al., "Insecticidal Crystal Proteins of <i>Bacillus thuringiensis</i> ", Microbiological Review 53, 242-255 (1989) American Society for Microbiology, Washington, D.C.
	Hull and Howell, "Structure of the Cauliflower Mosaic Virus Genome", Virology 86, 482-493 (1987) Academic Press, Inc. London and New York
	Ishida et al., (1996) "High Efficiency Transformation of Maize (<i>Zea mays</i> L.) Mediated by <i>Agrobacterium tumefaciens</i> " Nature Biotechnology 14, 745-750, Nature America, New York
	Itakura et al., "Expression in <i>Escherichia coli</i> of a Chemically Synthesized Gene for the Hormone Somatostatin" (1977) Science 198, 1056-1063, American Assn for the Advancement of Science, Washington, D.C.
	Jansens et al. (1997) "Transgenic Corn Expressing a Cry9C Insecticidal Protein from <i>Bacillus thuringiensis</i> Protected from European Corn Borer Damage", Crop Science 37, 1616-1624, Crop Science Society of America, Madison Wisconsin
	Last et al. (1990) "pEmu: an Improved Promoter for Gene Expression in Cereal Cells", Theor. Appl. Genet. 81, 581-588, Springer, Berlin and New York
	Lereclus, D., et al., "Expansion of Insecticidal Host Range of <i>Bacillus thuringiensis</i> by <i>In vivo</i> Genetic Recombination", Bio/Technology 10, 418 (1992) Nature Publishing Co., New York
	Mahillon et al., "Transformation of <i>Bacillus thuringiensis</i> by Electroporation", FEMS Microbiol. Letters 60, 205-210 (1989) Elsevier, Amsterdam, Holland
	Maxam, A.M. et al., "Sequencing End-Labeled DNA with Base-Specific Chemical Cleavages", Methods in Enzymol. 65, 499-560 (1980), Academic Press, Inc., London, U.K.

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

THIRD INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 3 of 3

Complete if Known

Application Number	10/614,524
Filing Date	July 8, 2003
First Named Inventor	Greta ARNAUT et al.
Examiner Name	
Attorney Docket Number	021565-083



NON-PATENT LITERATURE DOCUMENTS

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	McBride et al., "Amplification of a Chimeric <i>Bacillus</i> Gene in Chloroplasts Leads to an Extraordinary Level of an Insecticidal Protein in Tobacco", 1995, Bio/Technology 13, 362, Nature Publishing Co., New York
	Murray E. et al., "Codon Usage in Plant Genes", Nucleic Acids Research 17(2), 477-498 (1989), Oxford Univ. Press, Oxford, England
	Sanger et al., "DNA Sequencing with Chain-Terminating Inhibitors", Proc. Natl. Sci. USA 74(12), 5463-5467 (1977), National Academy of Sciences, Washington, D.C.
	Schnepf et al., "The Amino Acid Sequence of a Crystal Protein from <i>Bacillus thuringiensis</i> Deduced from the DNA Base Sequence", (1985) Journal of Biological Chemistry 260, 6264, American Society of Biological Chemists, Inc., U.S.A.
	Schnepf et al., " <i>Bacillus thuringiensis</i> and its Pesticidal Crystal Proteins", Microbiology and Molecular Biology Reviews, Sept. 1998, vol. 62, no. 3, p. 775-806, American Society for Microbiology, Washington, D.C.
	Shimamoto K., et al., "Fertile Transgenic Rice Plants Regenerated from Transformed Protoplasts", Nature 338, 274-276 (1989), Nature Publishing Group, London, England
	Stanssens P. et al., "Efficient Oligonucleotide-Directed Construction of Mutations in Expression Vectors by the Gapped Duplex DNA method Using Alternating Selectable Markers", Nucleic Acids Research 12, 4441-4454 (1989), IRL Press, Oxford, England
	Vaeck M., et al., "Transgenic Plants Protected from Insect Attack", Nature, Vol. 328 (1987), pp. 33-37, Nature Publishing Group, London, England
	Vanderzant et al., "Rearing of the Bollworm on Artificial Diet", Journal of Economic Entomology, vol. 55, no. 1, (1962) pp. 140-141, Entomological Society of America, College Park, MD
	Van Rie et al., "Mechanism of Insect Resistance to the Microbial Insecticide <i>Bacillus thuringiensis</i> ", Science 247, 72 (1990), American Assn for the Advancement of Science, Washington, D.C.
	Velten, J., et al., "Isolation of a Dual Plant Promoter Fragment from the Ti Plasmid of <i>Agrobacterium tumefaciens</i> ", EMBO J. 3, 2723-2730 (1984), IRL Press Limited, Oxford, England
	Velten, J. et al., "Selection-Expression Plasmid Vectors for Use in Genetic Transformation of Higher Plants", (1985), pp. 6981-6999, Nucleic Acids Research, IRL Press, Oxford, England
	Visser, B., et al., "Domain-Structure Studies of <i>Bacillus thuringiensis</i> Crystal Proteins: A Genetic Approach", in <i>Bacillus thuringiensis</i> , an Environmental Biopesticide: Theory and Practice, pp. 71-88, eds. Entwistle, P.F., Cory, J.S. Bailey, M.J. and Higgs, S., John Wiley and Sons, New York (1993)
	Wada et al., "codon Usage Tabulated from the GenBank Genetic Sequence Data", (1990) Nucl. Acids Res. 18, 2367-1411, Oxford University Press, Oxford, England
	White, Thomas J. et al., "The Polymerase Chain Reaction", TIG (1989), vol. 5, no. 6, pp. 185-189, Elsevier Science Publishers, UK
	Yannisch-Perron, C. et al., "Improved M13 Phage Cloning Vectors and Host Strains: Nucleotide Sequences of the M13mp18 and pUC19 Vectors", Gene 33, 103-119 (1985) Elsevier Science Publishers, UK
	Zhang et al., "analysis of Rice <i>Act1</i> 5' Region Activity in Transgenic Rice Plants" (1991) The Plant Cell 3, 1155-1165, American Society of Plant Physiologists, Rockville, MD.

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.